

Claims

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1. Process for preparing an aliphatic fluoroformate from an aliphatic alcohol, characterized in that carbonyl fluoride is reacted with the aliphatic alcohol, in the presence of sodium fluoride, in a solvent chosen from ethers, at a temperature of between -20°C and 50°C.
2. Process according to Claim 1, characterized in that the sodium fluoride is in the form of a powder whose grains have a specific surface of greater than or equal to 0.1 m<sup>2</sup>/g.
3. Process according to Claim 1 or 2, characterized in that the grains of sodium fluoride have an average diameter of less than or equal to 20 μm.
4. Process according to Claim 1, 2 or 3, characterized in that the carbonyl fluoride is introduced gradually into the reaction medium which contains the alcohol.
5. Process according to any one of the preceding claims, characterized in that the amount of carbonyl fluoride used is from 1.1 to 2 mol per mole of alcohol.
6. Process according to any one of the preceding claims, characterized in that the carbonyl fluoride is obtained by reacting phosgene, diphosgene or triphosgene, or a mixture thereof, with an excess of sodium fluoride powder whose grains have a specific

surface of greater than or equal to  $0.1 \text{ m}^2/\text{g}$  and/or an average diameter of less than or equal to  $20 \text{ }\mu\text{m}$ , in a solvent chosen from polar aprotic solvents, at a temperature of between  $25^\circ\text{C}$  and  $120^\circ\text{C}$ , and after  
5 passage of the gases present into a condenser whose temperature is between  $0^\circ\text{C}$  and  $-50^\circ\text{C}$ .

7. Process according to any one of the preceding claims, characterized in that the amount of sodium fluoride used during the reaction of the alcohol with  
10 carbonyl fluoride is between 1.1 and 2 mol per mole of the alcohol.

8. Process according to any one of the preceding claims, characterized in that for the reaction of the alcohol with carbonyl fluoride, the solvent is chosen  
15 from tert-butyl methyl ether, dioxane, tetrahydrofuran, 2-methyltetrahydrofuran, dibenzyl ether, ethylene glycol dimethyl ether and polyethylene glycol dimethyl ethers.

9. Process according to any one of the preceding  
20 claims, characterized in that the fluoroformate obtained is purified by treating it with an alkaline fluoride.

10. Process according to any one of the preceding claims, characterized in that 1 to 3% by weight of  
25 dimethylformamide is added to the fluoroformate solution.

11. Process according to any one of the preceding claims, characterized in that, when it is a solid, the fluoroformate is obtained in crystalline form by adding

to the fluoroformate solution a compound which does not dissolve the fluoroformate, chosen from a polar aprotic solvents, after which the fluoroformate is made to precipitate.

- 5 12. Process for preparing carbonyl fluoride, characterized in that phosgene, diphosgene or triphosgene, or a mixture thereof, is reacted with an excess of sodium fluoride powder whose grains have a specific surface of greater than or equal to 0.1 m<sup>2</sup>/g  
10 and/or an average diameter of less than or equal to 20 μm, in a solvent chosen from polar aprotic solvents, at a temperature of between 25°C and 120°C, and the gases present are then passed into a condenser whose temperature is between 0°C and -50°C.
- 15 13. Process according to Claim 6 or 12, characterized in that the grains of sodium fluoride have a specific surface of greater than or equal to 0.1 m<sup>2</sup>/g.
- 20 14. Process according to Claim 6, 12 or 13, characterized in that the grains of sodium fluoride have an average diameter of less than or equal to 20 μm.
- 25 15. Process according to any one of Claims 6 and 12 to 14, characterized in that the amount of sodium fluoride reacted with the phosgene is from 3 to 5 mol per mole of phosgene.
16. Process according to any one of Claims 6 and 12 to 15, characterized in that the phosgene and/or its precursors are introduced gradually.

17. Process according to any one of Claims 6 and 12 to 16, characterized in that the solvent is acetonitrile.

18. Process according to any one of the preceding  
5 claims, characterized in that it is performed with anhydrous compounds and under anhydrous conditions.

19. Process according to any one of Claims 6 and 12 to 18, characterized in that the liquids condensed by the condenser are recycled into the reaction medium.